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National Field Research Center, inc, Iowa City, IA

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**NATIONAL
ENVIRONMENTAL/ENERGY
WORKFORCE ASSESSMENT
PHASE III**

WASTE WATER PROGRAMS

1979

Conducted by:

NATIONAL FIELD RESEARCH CENTER, INC.

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16. ABSTRACT This directory, one of 18 volumes in Phase III of the National Environmental/Energy Workforce Assessment, provides information on post-secondary environmental education programs in the United States. Structured around information requests mailed to post-secondary education institutions, the directory provides the name and address of each institution listed, a contact person at each institution, the academic program title, and the degree offered at the institution (2-year, 4-year, etc.). Phase III includes twelve such directories of post-secondary programs: One each for air, noise, pesticides & toxicology, potable water, wastewater, radiation, solid waste, and energy; one for combined water/wastewater programs; and a composite volume on each of the three areas of environmental engineering/technology, environmental science/health, and environmental studies. In addition, Phase III includes the following six volumes: <u>Environmental Employment in Public Service Jobs Programs -- An Analysis of CETA Title VI FY 78 Projects</u>; <u>Salaries & Attendant Problems of Public Sector Environmental Employment</u>; <u>The Role of CETA in Direct Training and Employment</u>; <u>Private Sector Training Activities</u>; <u>Problems in Environmental Education & Training</u>; and the <u>Workforce Planning Bibliography</u>. Phase I of the <u>Assessment</u> evaluated workforce needs for pollution control and abatement in the U.S. during 1976-81. Phase II gathered data on training and educational programs in the post-secondary environmental education field as of 1978.			
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WORKFORCE ASSESSMENT
PHASE III**

Conducted by:

NATIONAL FIELD RESEARCH CENTER, INC.

Under Grant from:

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Grant No. T900591-03

1979

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INTRODUCTORY NOTE

The National Environmental/Energy Workforce Assessment, Phase III, was conducted by National Field Research Center, Inc., with main offices in Iowa City, Iowa. The following personnel have had primary responsibility for the development of the project reports.

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The volumes of post-secondary environmental and energy programs were developed under the auspices and guidance of the U.S. Environmental Protection Agency, by the National Field Research Center, Inc. as part of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT, PHASE III. Sincere appreciation is extended to the many individuals and institutions who assisted in the identification and description of the programs, thus generously contributing to the success of this national project. Of particular importance are those individuals identified as contact persons in the program entries.

A special word of appreciation is extended to Mr. J. Donald Cook, Chief, Workforce Coordination Team, U.S. Environmental Protection Agency, Washington, D.C., and to the Manpower Officers and Workforce Coordinators from each of the U.S. Environmental Protection Agency Regional Offices.

PREFACE

This volume includes all identified post-secondary educational and/or training programs which have been selected as pertinent to one media-specific area (i.e., air, wastewater, etc.). For ease of handling, the programs are presented in alphabetical order according to the name of the institution. The Appendix, however, presents a listing of the institutions by state, with reference to page numbers.

This portion of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT, Phase III, was conducted for the U.S. Environmental Protection Agency, by the National Field Research Center, Inc. with offices located in Iowa City, Iowa; Atlanta, Georgia; Denver, Colorado; and Washington, D.C.

FOREWORD

Information for this portion of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT, Phase III, was compiled through extensive review of catalogues from post-secondary education institutions listed in Post-Secondary Education, Education Directory, Colleges & Universities, 1976-77. All program entries were sent to the institutions for review and correction. In most cases, the program entries were returned after being reviewed. Those entries which were not returned have been indicated by an asterisk in front of the program title.

This twelve-volume report contains program entries from junior colleges, vocational/technical training institutes, community colleges, four-year colleges, and universities, as well as other training institutions. Programs are representative of all levels, from academic certification through doctoral degrees. The environmental pollution control areas of air, noise, pesticides, potable water, radiation, solid waste, wastewater and energy were surveyed. In addition, some programs which were not readily categorized

into media-specific areas (i.e., radiation, air, etc.) or which represented multiple media areas in curricula content, have been presented under the title of composite.

Readers are advised that material from the Acknowledgement through the Project Methodology is identical in all twelve program volumes. The reason for such duplication rests with the division of volumes into media specific areas, which increases probability that individuals will only read a given volume of special interest.

Readers are further advised that the purpose of these volumes is to point the direction for further information. Courses, programs and individuals are all subject to change over a given period of time. The inclusion of a specific program does not assure that the program is conducted every year nor does it assure that graduates meet specialized occupational requirements. Readers with specific questions should correspond directly with contact persons.

PROJECT BACKGROUND

The NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT, conducted by the National Field Research Center under the direction of the U.S. Environmental Protection Agency, is an effort to meet the national concern for the preservation and conservation of our country's resources. The project was developed as a multi-phase direct inquiry into the availability and readiness of our environmental workforce.

In keeping with the objective of the assessment, this national effort was directed at environmental/energy workforce requirements, national environmental education preparedness, and the functional relationship between the two.

Phase I of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT focused upon the development of "workforce demand projections" through 1982 for all public environmental agencies. This on-site assessment, which was carried out in all 50 states, Puerto Rico and the Virgin Islands, culminated in a numerical profile of the growth patterns and workforce needs at national and state levels. Stratification of the overall definition of "environmental occupation" into seven

distinct vocational areas enhanced even further the applicability of the results. In addition to this public sector workforce assessment, Phase I included an overview analysis of private sector needs and a brief review of selected environmental educational programs.

Phase II of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT was structured around an intensive on-site inventory of representative environmental educational offerings on a national scale. The primary objective of this portion of the project was to collect and aggregate data on training and educational programs in both the post-secondary education field and in the private sector and to do so by environmental area. Specifically, the study was designed to provide an overview of environmentally related post-secondary education programs, their program structures, representative course offerings, employment history of the graduates, and the faculty structures. Additionally, information was collected on program requirements and program projections regarding faculty and students.

Phase III of the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT was completed in mid-1979. In an effort to draw together the relationship between Phase I and Phase II

of the project, several major areas were selected and monographs developed. In an effort to assist Federal and State planners, an environmental/energy manpower bibliography was developed and annotated. A final portion of the Phase III involved the identification of all environmental/energy post-secondary education programs as compared to the Phase I and Phase II which presented representative programs. This compendium of post-secondary environmental/energy programs was presented in media-specific volumes (i.e., Air, Potable Water, Solid Waste, etc.). While more extensive research may be advisable, it is anticipated that the NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT in its entirety represents the most comprehensive research effort to date regarding environmental/energy workforce requirements and the educational community's ability to meet these needs.

PROJECT METHODOLOGY

The NATIONAL ENVIRONMENTAL/ENERGY WORKFORCE ASSESSMENT, Phase III, includes several components, one of which is made up of the directories of post-secondary environmental/energy programs. Utilizing the Post-Secondary Education, Education Directory, Colleges and Universities, 1976-77, requests were made of the 3,075 institutions and in addition any new institutions which could be identified. All environmental programs were categorized according to media areas, i.e., air, water, radiation, etc. The program entry information was sent to the contact person for corrections, deletions and general review. The contact persons were requested to return the reviewed information to project personnel. In the majority of cases, the information was returned by the institutions. Those program entries which were not returned have been indicated with an asterisk in front of the program title.

In total, 1,359 programs are presented in these volumes. All 50 states, the District of Columbia, Puerto Rico and the Virgin Islands are represented in the program entries. The introductions of each

volume present the details of selection criteria, geographic location, etc., of the programs presented in that specific environmental area.

The directories have been prepared by media specific area. The volumes which make up this portion of the project are:

- * AIR
- * NOISE
- * PESTICIDES & TOXICOLOGY
- * POTABLE WATER
- * WASTEWATER
- * WATER/WASTEWATER
- * RADIATION
- * SOLID WASTE
- * ENERGY
- * COMPOSITE: Environmental
Engineering/Technology
- * COMPOSITE: Environmental
Science/Health
- * COMPOSITE: Environmental
Studies

INTRODUCTION

This volume describes 28 post-secondary education/training programs which emphasize the environmental area of wastewater pollution control and abatement. The programs represent 16 states.

In addition to the entries contained herein, programs which emphasize the environmental area of potable water as well as wastewater are found in the volume of this study entitled "Water/Wastewater." Other programs which emphasize wastewater as well as other environmental media areas (i.e., air, radiation, etc.) are located in those volumes which include the composite programs. The reader is also referred to those volumes which are entitled:

- * COMPOSITE: Environmental Engineering/
Technology
- * COMPOSITE: Environmental Science/Health
- * COMPOSITE: Environmental Studies

Selection criteria specified the inclusion of at least three wastewater courses as requirements for program completion. Program areas of concentration include: water resources; wastewater pollution; plant operations and maintenance; environmental health; wastewater treatment and disposal; plant design; and, water chemistry. The number and types of degrees

offered through these programs are illustrated in the table below.

TABLE I
WASTEWATER PROGRAMS
Numbers & Types of Degree Offerings

Degree Level	No. of Programs	% of Total
Certificate	6	21%
Certificate; Two-Year	1	4%
One-Year	0	0
One-Year; Two-Year	1	4%
Two-Year	9	32%
Four-Year	1	4%
Four-Year; Graduate	1	4%
Graduate	7	24%
N/A	2	7%
TOTAL	28	100%

As might be anticipated, the table above illustrates that the largest percentage of these programs are presently being conducted at the certificate, two-year and graduate levels. Overall, about 60% of the programs are being administered through two-year institutions.

All programs included in this volume were submitted to the institutions for review and/or corrections. With the exception of 18%, all programs were reviewed and returned to project personnel. Those programs comprising the 18% are denoted by the addition of an asterisk in front of the program title.

Geographic distribution of these wastewater programs appears to be concentrated in the eastern portion of the country: 12 programs (41%) are currently being administered by seven northeastern states, while an additional 39% are being conducted by five southeastern states. One state in the northwest offers 7% of the total programs, and the remaining 12% are on-going in three southeastern states. In addition to the education/training programs identified herein, it should be noted that non-institutional training is available, in most states, through the state water and/or wastewater operators association as well as other associations or groups.

The following program entries are presented in alphabetical order in accordance with the institutional name. For a listing of programs by state location, the reader is referred to the Appendix.

PROGRAMS, ALPHABETIZED BY INSTITUTION

CARL SANDBURG COLLEGE

**Box 104 South Lake Storey Road
Galesburg, Illinois 61401**

**Catalog Year
1976-77**

contact person:

**Dr. William D. Masters, Director
Vocational - Technical Education
(309) 344-2518**

program title: **Wastewater Technology**

department: **Vocational - Technical Education**

degree: **1 year
2 year**

CENTRAL VIRGINIA COMMUNITY COLLEGE

**Wards Road South
P.O. Box 4098
Lynchburg, Virginia 24502**

**Catalog Year
1977-78**

contact person:

**Dr. Roger W. Becker
Chairperson
(804) 239-0321**

program title: **Civil Engineering Technology**

emphasis: **Water resources, Environmental pollution**

department: **Engineering and Technology Division**

degree: **2 year**

comments: **Courses: Environmental Pollution and Control ;
Water Resources Technology**

CHARLES COUNTY COMMUNITY COLLEGE

La Plata, Maryland 20646

**Catalog Year
1977-78**

**contact person:
Dr. William Engel
Professor and Chairperson
(202) 870-3008**

**program title: Pollution Abatement Technology
emphasis: Wastewater operations and maintenance
department: Pollution Abatement Technology
degree: 2 year**

CLACKAMAS COMMUNITY COLLEGE

**19600 South Molalla Avenue
Oregon City, Oregon 97045**

**Catalog Year
1976-77**

**contact person:
Dr. Daniel Lundy, Professor
Water Quality Technology
(503) 656-2631**

**program title: Wastewater Technology
department: Water Quality Curriculums
degree: 2 year**

GARRETT COMMUNITY COLLEGE

**Garrett Co. Md.
McHenry, Maryland 21541**

**Catalog Year
1976-77**

contact person:
**Mr. Oscar R. Harman
Chairperson and Associate Professor
(301) 387-6666 or 245-2181**

* program title: **Wastewater Treatment - Plant Operator**
department: **Division of Mathematics, Science and
Environmental Studies**
degree: **Certificate**
comments: **18 weeks; non-credit sponsored by the
Department of Natural Resources/CETA**

LINN-BENTON COMMUNITY COLLEGE

**6500 S.W. Pacific Blvd.
Albany, Oregon 97321**

**Catalog Year
1977-78**

contact person:
**Dr. Peter Scott, Director
Science & Technology Division
(503) 928-2361**

program title: **Wastewater Technology**
department: **Science & Technology Division**
degree: **2 year**
comments: **Develops graduates qualified for employment
as wastewater plant operators, engineering technicians, or
technical representatives for various manufacturing concerns.**

MIAMI-DADE COMMUNITY COLLEGE

**South Campus
11011 S.W. 104th Street
Miami, Florida 33176**

**Catalog Year
1977-79**

**contact person:
Mr. John C. Pistorino, Chairperson
Department of Engineering
(305) 596-1255**

**program title: Wastewater Treatment Plant Operation
department: Engineering
degree: Certificate**

NORTH FLORIDA JUNIOR COLLEGE

Madison, Florida 32340

**Catalog Year
1978**

**contact person:
Mr. Barry Barnhart, Coordinator
Wastewater Treatment Program
(904) 973-2288**

**program title: Wastewater Treatment Program
department: Wastewater Treatment
degree: Certificate**

NORTH SHORE COMMUNITY COLLEGE

**3 Essex Street
Beverly, Massachusetts 01915**

**Catalog Year
1977-78**

contact person:

**Dr. Bertram L. Blumenkrantz, Chairperson
Division of Science & Mathematics
(617) 927-4850 ext. 137**

program title: **Public Environmental Health Technology**

emphasis: **Wastewater Treatment Plant Operator;
Regulatory Food Inspector; Health
Technology**

department: **Essex Agricultural and Technical Institute**

degree: **2 year**

NORTHERN VIRGINIA COMMUNITY COLLEGE

**Woodbridge Campus
15200 Smoketown Road
Woodbridge, Virginia 22191**

**Catalog Year
1977-78**

contact person:

**Mr. Philip Connors, Associate Professor
Chairperson, Environmental & Natural Science
Division
(703) 670-2191**

*program title: **Environmental and Science Technology
Wastewater Treatment**

emphasis: **Wastewater Treatment Plant Operators
four levels IV through I**

department: **Environmental and Natural Sciences
Division**

degree: **Certificate**

OSCAR ROSE JUNIOR COLLEGE

**6420 S.E. 15th Street
Midwest City, Oklahoma 73110**

**Catalog Year
1976-78**

**contact person:
Dr. Harold Fox, Director
Oklahoma Water Utilities Training Center
(405) 737-6611 Ext. 247**

**program title: Wastewater Technology
department: Environmental Science
degree: 2 year**

PALOMAR COLLEGE

**1140 West Mission Road
San Marcos, California 92069**

**Catalog Year
1977-78**

**contact person:
Dr. Robert Kurelich
Coordinator
(714) 744-1150**

**program title: Wastewater Treatment and Disposal
department: Vocational Education
degree: Certificate
2 year**

SOUTHEASTERN COMMUNITY COLLEGE

**P.O. Box 151
Whiteville, North Carolina 28472**

**Catalog Year
1978-79**

contact person:
**Mr. William L. Wilson
Dean of Adult Education
(919) 642-7141 ext. 30**

program title: **Wastewater Treatment**
department: **Adult Education**
degree: **None**
comments: **This program is a non-credit curriculum.**

**SOUTHERN MAINE
VOCATIONAL AND TECHNICAL INSTITUTE**

**2 Fort Road
South Portland, Maine 04106**

**Catalog Year
1975-76**

contact person:
**Mr. Kirk J. Laflin, Director
New England Regional Wastewater Institute
(207) 799-7303**

program title: **Wastewater Treatment Technology**
emphasis: **Plant Design, Treatment Equipment,
Laboratory Technique, Maintenance
Programs, Safety and Operation**
department: **Wastewater Treatment Technology**
degree: **Certificate**

STATE TECHNICAL INSTITUTE AT MEMPHIS

**5983 Macon Cove
Memphis, Tennessee 38134**

**Catalog Year
1977-78**

contact person:
**Mr. Richard S. Joshlin, Assistant Professor
Program Chairperson, Environmental
Engineering Technology
(901) 377-4155**

program title: **Environmental Engineering Technology**
emphasis: **Wastewater Technology**
department: **Environmental Engineering Technology**
degree: **2 year**

STATE UNIVERSITY OF NEW YORK AT BUFFALO

**Parker Engineering
Buffalo, New York 14214**

**Catalog Year
1976-78**

contact person:
**Dr. Dale Meredith
Associate Professor
(716) 831-5223**

program title: **Water Resources and Environmental
Engineering**
emphasis: **Water & Wastewater Engineering,
Water Resources Engineering, Air
Pollution**
department: **Civil Engineering**
degree: **4 year**
comments: **Bachelors Degree in Civil Engineering**

STATE UNIVERSITY OF NEW YORK AT BUFFALO

**Parker Engineering
Buffalo, New York 14214**

**Catalog Year
1976-78**

**contact person:
Dr. Dale D. Meredith
Associate Professor
(716) 831-5223**

**program title: Water Resources and Environmental
Engineering
emphasis: Water Resources, Wastewater, Water
Supply, Hydraulics, Hydrodynamics
department: Civil Engineering
degree: Graduate**

ULSTER COUNTY COMMUNITY COLLEGE

Stone Ridge, New York 12142

**Catalog Year
1977-78**

**contact person:
Mr. Richard Glazer
Professor
(914) 681-7621**

***program title: Science Laboratory Technology
Water Management
emphasis: Water Quality
department: Science Laboratory Technology
degree: 2 year**

UNIVERSITY OF CONNECTICUT

Storrs, Connecticut 06268

**Catalog Year
1978-79**

**contact person:
Dr. Richard P. Long
Head of Department
(203) 486-2000**

**program title: Environmental Engineering
emphasis: Wastewater, Solid Waste
department: Civil Engineering
degree: Graduate
comments: Wastewater research station.**

UNIVERSITY OF THE DISTRICT OF COLUMBIA

**4200 Connecticut Avenue, N.W.
Washington, D.C. 20008**

**Catalog Year
1977-78**

**contact person:
Dr. Annye C. Buck
Dean, College of Life Sciences
(202) 282-7380**

**program title: Water Pollution Technology
emphasis: Chemical & Microbiological Water Analysis:
Water and Wastewater treatment; Water
Quality Monitoring
department: Environmental Science
degree: 2 year**

UNIVERSITY OF FLORIDA

Gainesville, Florida 32611

**Catalog Year
1977-78**

contact person:

Dr. E.E. Pyatt, Chairperson

**Department of Environmental Engineering
Sciences**

(904) 392-0841

program title: Water Chemistry/Water Pollution Control

department: Environmental Engineering Sciences

degree: Graduate

UNIVERSITY OF LOWELL

Civil Engineering Technology

University of Lowell

Lowell, Massachusetts 01854

**Catalog Year
1976-78**

contact person:

Dr. Donald S. Pottle, Director

Civil Engineering Technology

(617) 459-7193

program title: Wastewater Treatment Plant Operations

department: Wastewater Treatment

degree: Certificate of Completion

UNIVERSITY OF MAINE

**103 Boardman Hall
Orono, Maine 04473**

**Catalog Year
1977-78**

contact person:
**Dr. Willem F. Brutsaert
Professor
(207) 581-7693**

program title: **Civil Engineering**
emphasis: **Sanitary Engineering - Water Supply;
Water Resources Engineering Industrial
Wastes**
department: **Civil Engineering**
degree: **Graduate**

comments: **The Department offers a Ph.D. in Sanitary
Engineering and a Masters in Civil Engineering in the area
of Sanitary Engineering.**

UNIVERSITY OF NEBRASKA

Lincoln, Nebraska 08508

**Catalog Year
1977**

contact person:
**Dr. Edward Wilson, Chairperson
Department of Civil Engineering
(402) 472-2371**

program title: **Civil Engineering (undergraduate)
Sanitary Engineering (graduate)**
department: **Civil Engineering**
degree: **4 year
Graduate**

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Chapel Hill, North Carolina 27514

**Catalog Year
1977**

contact person:

**Dr. Russell F. Christman
Professor and Department Chairman
(919) 966-1171**

**program title: Environmental Chemistry and Biology
department: Environmental Sciences and Engineering
School of Public Health
degree: Graduate**

WEST VIRGINIA UNIVERSITY

Morgantown, West Virginia 26506

**Catalog Year
1977-78**

contact person:

**Dr. Jay Hillary Kelley
Dean
(304) 293-0111**

***program title: Mineral Processing Engineering
emphasis: Water Pollution
department: Engineering
degree: Graduate**

WEST VIRGINIA UNIVERSITY

Morgantown, West Virginia 26506

**Catalog Year
1977-78**

contact person:
Dr. Jay Hillary Kelley
Dean
(304) 293-0111

*program title: **Petroleum Engineering**
emphasis: **Stream Pollution**
department: **Engineering**
degree: **Graduate**

WESTERN PIEDMONT COMMUNITY COLLEGE

Morganton, North Carolina 28655

**Catalog Year
1976-77**

contact person:
Mr. Jack Huss
Chairperson
(704) 437-8688

program title: **Wastewater Treatment Operator**
department: **Natural Science and Mathematics**
degree: **Certificate**

APPENDIX
Programs, Listed by State

STATE	INSTITUTION	PAGE
*****	*****	*****
CALIFORNIA	Palomar College.....	14
CONNECTICUT	University of Connecticut.....	18
DISTRICT OF COLUMBIA	University of the District of Columbia.....	18
FLORIDA	Miami-Dade Community College.....	12
	North Florida Junior College.....	12
	University of Florida.....	19
ILLINOIS	Carl Sandburg College.....	9
MAINE	Southern Maine Vocational and Technical Institute.....	15
	University of Maine.....	20
MARYLAND	Charles County Community College.....	10
	Garrett Community College.....	11
MASSACHUSETTS	North Shore Community College.....	13
	University of Lowell.....	19
NEBRASKA	University of Nebraska.....	20
NEW YORK	State University of New York at Buffalo.....	16
	State University of New York at Buffalo.....	17
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STATE	INSTITUTION	PAGE

NORTH CAROLINA	Southeastern Community College	15
	University of North Carolina at Chapel Hill	21
	Western Piedmont Community College	22
	Oscar Rose Junior College	14
OKLAHOMA	Clackamas Community College..	10
OREGON	Linn-Benton Community College	11
	State Technical Institute at Memphis	16
TENNESSEE	Central Virginia Community College	9
	Northern Virginia Community College	13
	West Virginia University	21
VIRGINIA	West Virginia University	22